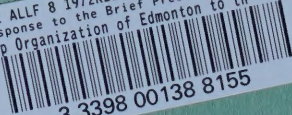


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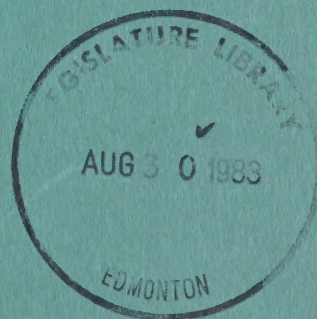


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A RESPONSE

*to the Brief presented by
the S.T.O.P. Organization of Edmonton
to the Minister of Lands & Forests, 1972*



ALBERTA DEPT. of LANDS & FORESTS
September, 1972

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MEMORANDUM DEPARTMENT OF LANDS AND FORESTS

NWR

OUR FILE NO.: F/M S 6.53

YOUR FILE NO.:

FROM: Head,
Timber Management Branch.

TO: Director of Forestry.

DATE: November 9, 1972.

Re: Mr. A. Zimmer Accusations
North Western Pulp & Power Ltd.
Hinton, Alberta

As requested some time ago, the Silviculture Section of the Timber Management Branch have undertaken a complete review of Mr. Zimmer's submission to members of the Executive Council. The cost of the review has been \$1,800.00, none of which was allowed for in our Departmental estimates for the current fiscal year.

The review establishes quite clearly that Mr. Zimmer misrepresented the facts in his presentation. There are numerous examples of mis-statements and obvious bias in the selection of photo-points. Our report does not represent a balanced picture of the operation, as it was designed to specifically report on the areas selected by Mr. Zimmer. These are obviously some of the worst areas on the lease. A very complete and exhaustive study is now being proposed to enable a balanced examination of the entire operation.

Because the report counters most of Mr. Zimmer's points, it could leave the impression that the Timber Management Branch are defending all aspects of the operation. Such is not the case.

The Timber Management Branch have expressed concern and unsuccessfully attempted to modify the cutting ground rules in respect of three major problems on the forest management area:

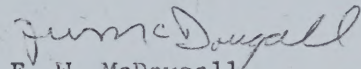
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1. The premature removal of reserve blocks, which has resulted in the development of very extensive cut areas to the detriment of the aesthetics, watershed, soil, timber and game productivity.

2. The mis-location of roads and bad road construction and maintenance practices.

3. The inadequacy of the ground rules in relation to reserve timber left along rivers, streams and lakes. Note: This matter has recently been resolved by the adoption of more stringent ground rules after two years of negotiations.

The reason for the lack of action on the above three points may be found in Sections 12 (5) and 53 of the Forest Management Agreement as authorized by Order-in-Council 1647/68.



F. W. McDougall,
Head,
Timber Management Branch.

A RESPONSE

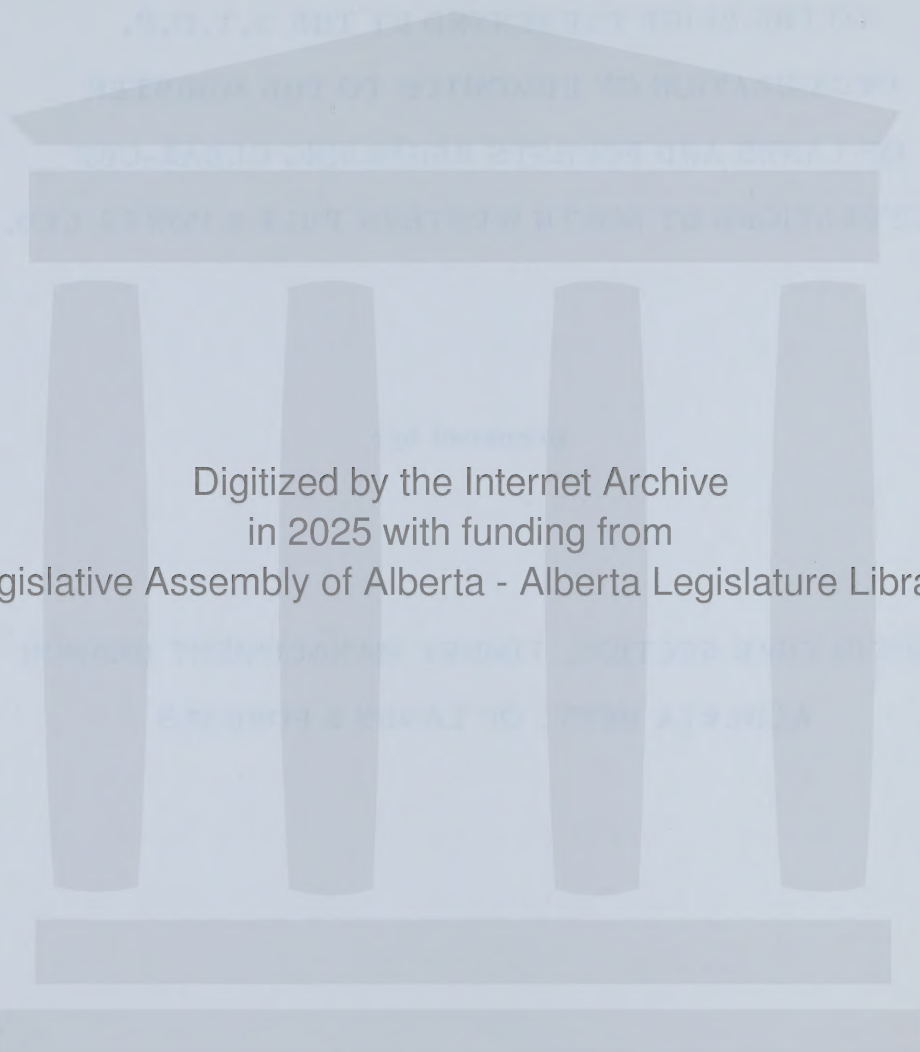
TO THE BRIEF PRESENTED BY THE S.T.O.P.
ORGANIZATION OF EDMONTON TO THE MINISTER
OF LANDS AND FORESTS REGARDING CLEAR-CUT
OPERATIONS BY NORTH WESTERN PULP & POWER LTD.

September, 1972.

prepared by:

SILVICULTURE SECTION, TIMBER MANAGEMENT BRANCH
ALBERTA DEPT. OF LANDS & FORESTS

September, 1972



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A RESPONSE
TO THE BRIEF PRESENTED BY THE S.T.O.P.
ORGANIZATION OF EDMONTON TO THE MINISTER
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SILVICULTURE SECTION, TIMBER MANAGEMENT BRANCH
ALBERTA DEPT. OF LANDS & FORESTS

September, 1972.

INTRODUCTION

The brief and slide presentation which Mr. A. Zimmer presented to the Minister of Lands and Forests on behalf of the S.T.O.P. organization of Edmonton in June of 1972, charged North Western Pulp and Power Ltd. with improper forest management and poor silvicultural practices and inferred inadequate governmental control over industry activities in these fields. This presentation is intended as a reply to Mr. Zimmer and to S.T.O.P. and it is based in its entirety on Mr. Zimmer's slides and verbal commentaries thereon.

It is widely recognized by foresters in Alberta that the S.T.O.P. brief is mainly based on aesthetic views and not on facts. The following presentation substantiates this view with field measurements and professional experience in the fields of silviculture and tree biology.

The approach used in this response to Mr. Zimmer and to S.T.O.P. was to relocate in the field the exact locations of as many of Mr. Zimmer's 64 photos as possible in order to evaluate his charges that logging and scarification remove all chance of reforestation by creating "desert"

environments for trees. By choosing Mr. Zimmer's field locations one could not be charged with bias of sample nor with evasion of issues.

Sample plots were put in the areas photographed by Mr. Zimmer and all coniferous seedlings staked with 4' stakes and rephotographed. These plots were placed as near to the centre of each location as physically possible and wherever possible made to span the full picture angle. Plots 100 feet wide were located in the field and 200 seedlings staked extending the plot into the picture as far as necessary to tally this number of seedlings.

Mr. Zimmer also charged that scarification and logging cause erosion, that the North Western Pulp and Power Ltd. had logged to the edge of three permanent water courses (in violation of legal agreement not to log closer to permanent water courses than 66 feet) in addition to the damages caused the environment for regeneration by scarification and clearcutting large tracts of timber. Also these charges will be answered in some detail by referral to field observations, to cut records, and to published information on matters of erosion and water flow.

REGENERATION AFTER LOGGING (as per Mr. Zimmer's photographs)
ON THE NORTH WESTERN PULP & POWER LTD. LEASE AREA NEAR THE
YELLOWHEAD TOWER LOOKOUT AND BETWEEN THE BERLAND RIVERS AND
FRED CREEK ON THE GRANDE CACHE HIGHWAY

A total of 35 black and white photographs were taken by Mr. Zimmer to depict how current forestry practices by North Western Pulp and Power Ltd. (henceforth referred to as N.W.P.&P.) of Hinton damage the forest environment and prevent the establishment of new forests. These photographs were taken in only nine areas and of these two locations depict what Mr. Zimmer calls "preferable" stocking. The photo numbers referred to in the following are those used in the slide presentation by Mr. Zimmer (see attached, Appendix I).

Photo #8. "...We are back in the Yellowhead tower area and again we can see how sparce coniferous tree life is within this area which I described earlier as being bald from horizon to horizon. I can only notice one or two trees with large magnification, or one or two young trees that is with large magnification on this entire landscape"... (this and subsequent quotations are all from Mr. Zimmer's slide presentation, see Appendix I).

Zimmer.

Photos 6, 8, 11, 12, 14, 15, 43, 44, and 57 were all taken in Section 31, of Township 49, Range 22, W5 along the new road branching off the Robb road and going three miles west of the Yellowhead Tower Lookout. A total of three field plots were located in this area thus covering all photos critisizing N.W.P.&P. for insufficient regeneration.

Photo complex 1 shows Mr. Zimmer's black and white photograph #8 and two colour prints taken of the exact same area in late August of 1972 by the Silviculture Section. The white stakes in the second colour picture each represent one coniferous seedling three or more years old. According to our survey, the foreground contains on the average 815 lodgepole pine seedlings per acre. This constitutes overstocking by our standards in that any area with more than 600 seedlings per acre three years or older will encounter crowding problems before the trees reach maturity. Also, mortality among coniferous seedlings after the third year is minimal.

This particular area was cut in 1961-1962 and scarified in 1962 according to N.W.P.&P. cut records. A regeneration survey done by the company in 1967 showed 67% stocking in the area. Average seedling height was about 10". The staked seedlings constitute only a small



Zimmer #8



Hellum



Hellum

sample of pine regeneration on this hill which was quite uniformly stocked to lodgepole pine all over. As in all later colour photos with staked seedlings, the plots show ample stocking at photo centres and these samples were indicative of general stocking levels over all reforested land in each photo.

It therefore would appear that Mr. Zimmer's charge of paucity of regeneration in this area is in grave error. Photos 6, 11, and 57 are covered by photo 8.

Photo #15. "...The grass growth here is very dense; again it would make beautiful environment for pheasants, I would believe, if there would have been enough water there but it sure makes a poor environment for a forest"...

Zimmer.

The tree in the far right of photo 8, seen against the horizon, is the same tree as seen in the foreground of photo 15, and the snag seen in photo 15 is the same as the snag next to the same pine tree in photo 8. Both photos 14 and 15 were taken with a telephoto lense thus distorting foreground to the point where it became impossible to relocate the exact photo position. This being the case, the snag and background were aligned and an approximate location chosen. Photo Complex 2 shows the details of the regeneration plot-survey established in August of 1972.

The stocking to pine in this area was 382 seedlings per acre or 38.2% stocking judging by the plot in the second colour photo. Again, the stakes are only a sample indication of the general stocking in the whole photo area. However, this is insufficient stocking to meet the 40% standard, but this area was only logged in 1969 and scarified in the spring of 1970. Seeds are still being released from the pine cones, and a considerable number of additional pine seedlings may be expected from this additional seed. It is therefore too early to retreat this area on the basis on insufficient stocking to coniferous regeneration. The 1951-62 cut, which lies just behind the snag, had considerably more regeneration than the foreground, as indicated by Photo Complex I.



Zimmer #15



Hellum



Hellum

The average height of tree seedlings in this area was 4" and the main proportion of the seedlings were three years old and they should have been visible to Mr. Zimmer 1971 when he made his survey. It is therefore concluded that his statement of poor climate for regeneration is inaccurate and misleading.

Photo #12. "...We didn't detect any regenerated trees either".

Zimmer.

Photo complex 3 shows that the foreground in this area has considerable pine stocking. In fact the stakes indicate 64.6% stocking or 646 seedlings per acre three years and older. The average seedling height was about 4". This stocking density was typical of the whole area.

This area was logged in 1969 and scarified in the spring of 1970, as in photo 15, and there is probably still pine seed retained in the cones which will be shed over the next one or two years. Again, one must conclude that Mr. Zimmer did not see the abundant pine regeneration and that his statement of no "regenerated trees" is erroneous.

Photographs 43 and 44 were taken in exactly the opposite direction to photo 12, standing virtually in the same spot. Because photos 12, 43, and 44 are of the same area of land only one field sample was taken especially because of the proximity to photo 15. (See Appendix II).



Zimmer #12



Hellum

Photo #10. "...We still can not detect anything of significance as far as regeneration is concerned".

Zimmer.

Three regeneration plots were located in the general area of photos 1, 9, 10, 41, 42, and 64. They were located in the areas pictured on photos 10, 41, and 64. This area is located in Section 32, Township 49, Range 22, W5, along the Robb road close to the previous sets of photos.

Photo Complex 4 (bottom photo) shows this area to have some considerable stocking to coniferous seedling. Colour photo number two shows that there are approximately 335 spruce and pine seedlings per acre here 5 or more inches tall. This area was logged in 1966-67 and scarified in 1967. It is likely that this area will only need fill-in planting next year.

The foreground in these photos was disturbed by the road right-of-way. The staked seedlings in the bottom colour photo are again indicative of the general stocking on the whole hillside, exclusive of the road side in the foreground and the old logging road leading off to the right from photo centre.



Zimmer #10



Hellum



Hellum

Photo #41. "...What we see here is that slash covers the area to an average depth of about one foot in solid wood. The walking in this area would of course be very difficult and therefore the slash would require treating before any planting could be undertaken".

Zimmer.

Again this area was cut in 1966-67 and scarified in 1967. The photo centre (bottom photo) contains about 350 coniferous seedlings per acre (See Photo Complex 5), and therefore suggests the need for supplemental planting in 1973. The photo plot is representative of the whole area. Photos 10 and 41 overlap on the ground and therefore lend strength to the understanding that the whole cut block will need some supplemental planting.

If all the visible slash were spread evenly all over the ground in photos 10 and 41, the ground would not be covered anywhere near 12" in solid wood. While Mr. Zimmer may be correct in diagnosing this area to be in need of supplemental planting, access or slash treatment is not a problem.



Zimmer #4



Hellum



Hellum

Photo #64: "...This picture has been purposely chosen as the last picture since it very well represents the forest of the future in Alberta if we continue with present regulations under which the pulp mill is allowed to operate. What we are looking at is an area bald from horizon to horizon, there is not very much forest environment left,"...

Zimmer.

This area was cut in 1969 (and not in 1963 as stated by Mr. Zimmer) and scarified in the spring of 1970. According to Photo Complex 6, the photo plot contains 543 coniferous seedlings per acre and both the pine and the spruce are about 6" tall. The plot is again representative for stocking over the whole area. The immediate foreground is the Robb road right-of-way.

This was Mr. Zimmer's closing picture to depict how desolate the landscape is because of clearcutting and scarification practices by N.W.P.&P. It is indeed regrettable that such charges be based on such inadequate knowledge of fact.



Zimmer #6



Hellum



Hellum

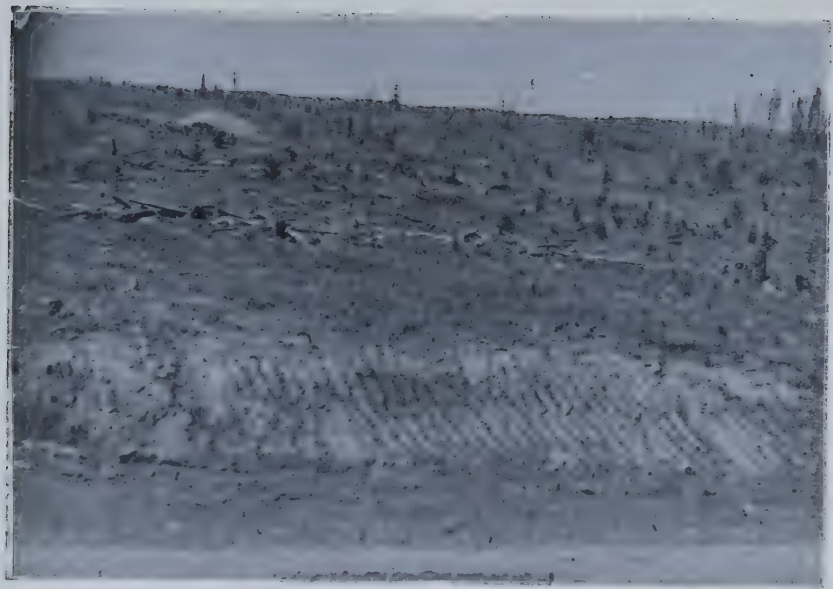
Photo #52. "...On slide 52 we can see a mixture of regenerated fir and pine and what appears to be advance growth, that is trees, young trees, which were in this area before the harvesting operation was commenced. The trees in this particular area were found to be an average of ten by eighty feet apart".

Zimmer.

Photo Complex 7 shows that there are abundant conifer seedlings in this area, in fact there were on the average 670 seedlings per acre of spruce and pine. Even if one should only count the advanced growth on the plot there would be a tree every 10 x 20 feet not 10 x 80 as claimed by Mr. Zimmer. The average spacing among all seedlings in the photo plot is 8.0 x 8.0 feet which is too dense if all seedlings survive to maturity. The foreground is right-of-way for the new Grande Cache Highway. The plot is representative of the stocking of trees on the whole hillside except for the right-of-way.

The regeneration is predominantly black and white spruce and lodgepole pine. There is less than 10% balsam fir in the sample plot. Seedlings are on the average 36 inches tall here.

Photos 51 through 56 are in the immediate area of photo 52 (See Appendix II) and were thus not sampled. This area was horse logged in 1959 and a N.W.P.&P. regeneration survey shows the whole cut block stocked to 40%+ in 1969.



Zimmer
#52



Hellum



Hellum

The erosion visible on photo 54 is likely caused in part by improper treatment of an old logging road and certainly also caused by change of grade brought about by location of new Grande Cache Highway the ditch for which runs in the foreground.

Photo #49. "...What you are looking at here is some remains of earlier methods of scarification used in the area". "If I may ask you to put the picture on the sharp focus you will probably agree with me that there is hardly a blade of grass which grows between those windrows".

Zimmer.

This is not intended as scarification. The area was cut in 1956-57 and, according to N.W.P.&P. records, this is an extraction road. The mineral soil is indeed scraped off and the most exposed parts of these roads are poorly regenerated. However, this method of extraction was not used after about 1957, and is certainly not used today. Photo Complex 8 shows again that the general area within the photo angle has ample regeneration. There are in fact 856 seedlings per acre in this general area judging by this photo location which is typical of much of the general area. The predominant regeneration is to lodgepole pine and white spruce with some balsam fir and black spruce also present. Seedlings in this area are on the average 12 inches tall.

Photo #50 is immediately adjacent to photo #49, and was therefore not sampled.



Zimmer #49



Hellum



Hellum

Photo #2. "...What we see here is a completely denuded area almost bald from horizon to horizon...A little immature timber is left in the foreground."

Zimmer.

This area was horse logged in 1959 and a company regeneration survey of 1969 classified this area as adequately stocked by our standards (40%+). Photo Complex 9 may not show the two hundred 4' tall stakes placed by seedlings in the very centre of the picture just up hill from the road, but our survey showed that at least this part of the photo had an average of 968 seedlings per acre and less than 10% of these were advanced growth. The average seedling height was about 36 inches. There is abundant pine and spruce regeneration all over this hill, but it is not made visible by photography from over a mile away.

The timber in the foreground is mature black spruce and lodgepole pine and not a "little immature timber". The staked plot is representative of the whole hillside.



Zimmer
#2



Hellum



Hellum

Photo #30. "...I can not tell whether you can get this area clear enough, but it seems to have been completely stripped in that area of all plant life".

Zimmer.

Mr. Zimmer is here referring to the borrow pit in the foreground. The area in the back, judging by the plot location depicted in Photo Complex 10, contains 1,360 lodgepole pine seedlings per acre. This plot is again entirely typical of the stocking on the hill in general.

The new Grande Cache Highway was completed in 1969 and the borrow pit in the foreground should not be blamed on forestry operations. Logging in this area was completed in 1963-64 and the land was scarified in 1966. This is the old E7 - L3 timber licence issued before the time of N.W.P.&P. logging in the area.

The seedlings in this area were about 18 inches tall and most vigorous. This area will need to be thinned in another 10 years or less if good growth is to be maintained for the remaining trees.



Zimmer #30



Hellum

Photo #5. "...And we also see some pine advance growth on the right hand side. Advance growth as far as I know which has not been restocked by the company but which seems to have stocked itself from mature trees prior to harvesting".

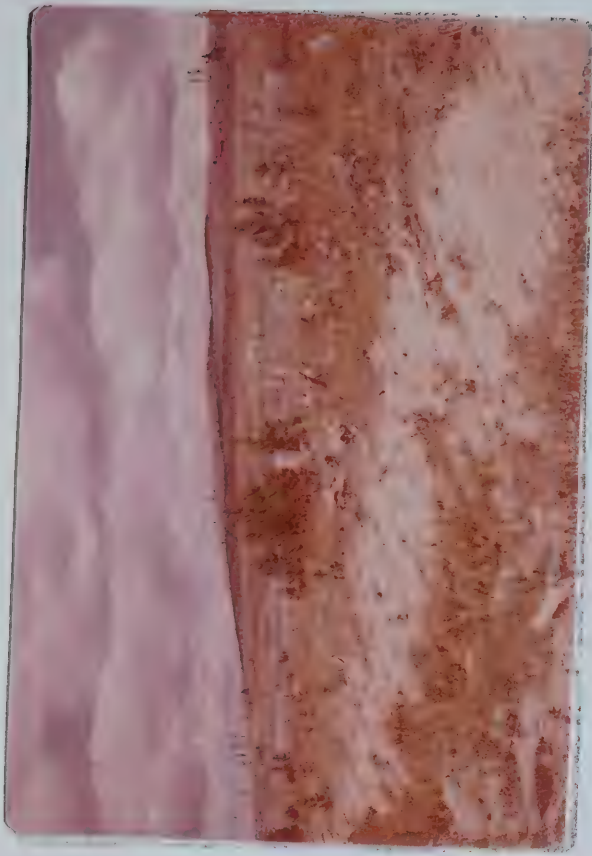
Zimmer.

Photos 3, 4, and 5 as well as 16 were all taken in the area immediately adjacent to the junction of the old and the new Grande Cache Highway in Section 5 or 6, Township 55, Range 2, W6. The area to the left of the road in photo 4 was logged in 1970 and scarified in July of 1971. There is no apparent regeneration over most of this freshly scarified area.

(Photo Complex 10).

A regeneration plot (centre photo 5) was located on the hill in the background. While the foreground was again scarified in July 1971 and supported no recent regeneration, as one might expect, the hill in the background contained 1,110 lodgepole pine seedlings per acre judging by the plot at photo centre which was again typical of stocking on the whole hillside. The seedlings were about 10 inches tall and most vigorous. This area was logged before 1966 and then scarified by N.W.P.&P. in 1966. It will be in need of thinning in 10 or more years.

It is not possible to predict what stocking one might expect on the recently scarified area, but there is no immediate reason to expect less stocking here than on the far hill for the timber was the same in both areas, mainly mature lodgepole pine.



Hellum



PHOTO COMPLEX 10

Zimmer #16



Zimmer #5



Hellum

Photo 16 shows a 1971 cat track onto the area scarified in July of 1971. Photo Complex 10 shows that this cat track, which was made only days before Mr. Zimmer visited the area, had grassed in well by late August of 1972.

Photo #59. "...On slide 59 we see just how dense mother nature seeds trees in order to prevent environment destruction following fire". "And thus natural selection will only let the strongest and healthiest trees survive this close competition, what remains then is a healthy forest".

Zimmer.

There are over 10,000 stems per acre in the foreground on photo 59 and over 3,700 stems per acre in the background. This is far too dense for good tree growth. Lodgepole pine does not thin itself well and Mr. Zimmer's statement that a healthy stand will result is not factual for this species (Photo Complex 11).

This area is in the Gregg burn of 1956 in Section 24, Township 49, Range 24, W5.



Zimmer #59



Hellum

Photo #60. "...I estimate that the pine in this particular area regenerate at a density of at least one tree every two square feet". and photo 61 "I can not agree with some foresters' opinions who claim that such dense regeneration will result in stagnation of the entire regrowth".

Zimmer.

Both Photos #61 and #60 were taken in Section 15 of Township 49, Range 24, W5, in the Gregg Burn of 1956.

Photo Complex 12 shows where N.W.P.&P. "accidentally" thinned the pine in photo 60 in between the time that Mr. Zimmer took his photo in July of 1971 and August of 1972 when the colour photos were taken. The background of photo 60 and 61 contain about 53,600 lodgepole pine seedlings per acre judging by two sample plots 10 x 10 feet in area located within the camera angle of photo 60. The thinned part contains over 1,670 seedlings per acre and this is still far too dense for good tree growth.



Zimmer #60



Hellum

Photos 62 and 63. "...Now I have reasons to call this a method of selective cutting". "I understand that this operation was started by Muttart Lumber at one time and I also understand that at the present the thinning of the stand is being continued by inmates of a close-by limited security camp." "Once the new regeneration has successfully been established, and following another five years of that, the remaining mature timber can then be cut without too much damage to the still flexible young growth and the forest environment will never suffer."

Zimmer.

This thinning was done only for aesthetic reasons (Photo Complex 13) and could scarcely be considered an economic operation. This work is carried on today by the Department of Lands & Forests with the aid of minimum security inmates. Removal of residual pine after initial thinning would raise havoc with existing regeneration unless current methods of logging be abandoned. Pine would certainly not be able to establish an understory stand and spruce invasion would be very slow. Seeding with spruce, or underplanting would not be wise in view of the need to scarify for seeding or planting. Spot scarification, as recommended by Mr. Zimmer, has proven only marginally successful in the past in Alberta, and in order to establish 400 seedlings per acre very much of the natural forest floor would have to be disturbed even with spot scarification.



Zimmer #62



Zimmer #63

Photo #31. "...Here we have what happens when the timber is cut right into a watershed, in this case you are looking at an Alberta river. This is water conservation, pulpmill style. This has been tolerated by the former government; I think the new government should put an end to this".

Zimmer.

LOGGING TO WATERS' EDGE

The three areas in which Mr. Zimmer charges that N.W.P.&P. has logged to waters' edge are along the Gregg River in Section 16, Township 49, Range 24, W5, along the "Loffland Rig Road" in Section 1, Township 50, Range 22, W5, and in Section 7, Township 55, Range 2, W6 along the Grande Cache Highway.

Photo Complex 14 contains four of Mr. Zimmer's photos (31, 32, 33, 34) showing what would appear to be logging to waters' edge. The water seen in the foreground is indeed a part of the Gregg River. When the Gregg River crossing upstream from this picture was put in before 1969, the road ditch on the upstream side was not protected from river water entering it because the ditch was several feet above normal water level. In 1969 the Gregg River flooded and the ditch was eroded and deepened so that part of the river now flows year-round in the ditch. This matter has been brought to the attention of N.W.P.&P. through their silviculturist.

What is important is that logging which was done in the winter of 1968/69 was done before the river changed this part of its course. The whole matter can be rectified by closing off the road ditch. The washout at this point in the Gregg River Road is regularly forded by all cars at present.



Zimmer #31



Zimmer #32



Zimmer #33



Zimmer #34



Hellum

Photo Complex 15. "...We are along the same road below the area where the timber has been cut right into a small creek, the head-waters of a small creek".

Zimmer.

This set of photos (38, 39, 40) indeed shows flowing water but what Mr. Zimmer neglected to say is that the creek crosses the road flowing out from behind the photographer (in the centre of the photo). The creek then turns sharply to the right and disappears into the timber to the right on photo 39 (see also bottom colour photo for general area orientation - Photo Complex 15). The colour photograph shows the general area from a different angle to show how logging does in fact not approach closer to the creek than 66 feet except in the right-of-way of the road itself where the timber has been removed.

The road ditch may at times carry water, but it is not even an intermittent creek.



Zimmer #38



Zimmer #39



Zimmer #40



Hellum



Hellum



Hellum

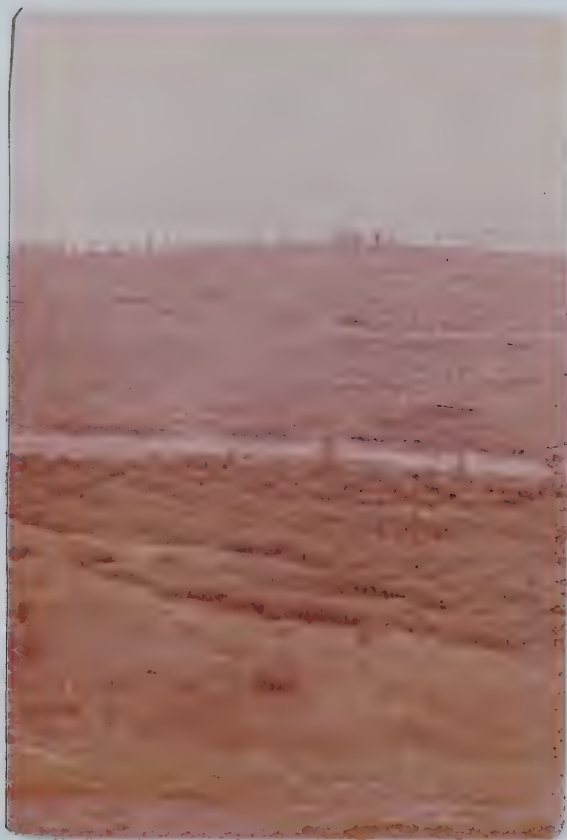
Photo #7. "...However, just beyond the road in the foreground we can see, next to the road, willow flats covered with some grass extending up to a white line in the centre of the picture. This white line is actually the creek bank which we tried to photograph here..."

Zimmer.

Photo Complex 16 shows, however, that the white line is not the creek. It is an old logging road which Mr. Zimmer would have seen had he gone there to look. The creek flows in the middle of the "willow flat" and is no where in this picture closer than 150 feet to the area logged.



Zimmer #7



Hellum

EROSION AND SCARIFICATION

By and large this section is composed of photographs of borrow pits and road construction by the Department of Highways, of seismic activity damages and logging slash, and of two sites where access roads put in by N.W.P.&P. have not been removed after logging thus causing local erosion problems.

Mr. Zimmer's understanding of water flow in forested and logged situations is wanting in accuracy to the degree that his whole argument against lack of erosion control in forest operations is lost. There is evidence for erosion caused by logging roads, but there is very scanty proof indeed anywhere for erosion caused by logging itself or scarification. The book entitled "Forests and Floods in the Eastern United States" by H.W. Lull and K.G. Reinhard (U.S.D.A. For. Serv. Res. Paper NE-226, 1972) is lucid background for a clearer understanding of the effects of logging on water flow than what Mr. Zimmer states as fact.

Photo #23. "...It can be seen very clearly that this erosion is not caused by the road but is caused by water which could not be retained on that clearcut hillside and thus float towards the road causing excessive erosion"...

Zimmer,

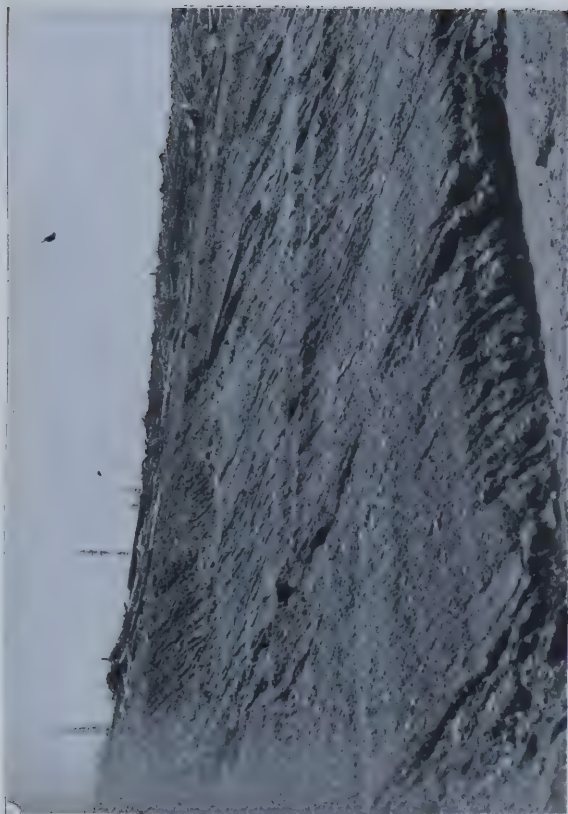
In photos 23, 27, 28, and 29 (Section 6, Township 55, Range 2, W6) the bare and sloping mineral soil surface is simply the cutback slope for the New Grande Cache Highway and not due to erosion as a result of scarification (Photo Complex 17).

Photo 23 shows an erosion gash which was formed as a result of the road bed lowering the flow-grade for an already intermittent creek, seen as a slight draw behind the scar. There is little or no surface flow as a result of scarification and the erosion seen in Photo 23 would probably have only been somewhat smaller had the trees not been removed and the area not scarified.

Zimmer #23



Zimmer #27



Zimmer #29

PHOTO COMPLEX 17







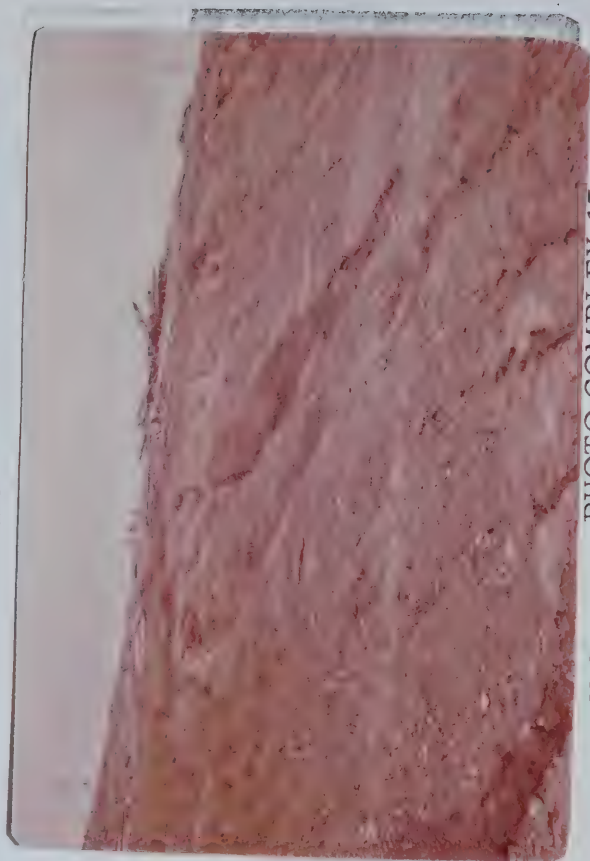
Hellum



Hellum



Hellum



Hellum

Photo #24. "...as a matter of fact this very same wash which again is not caused by the road but is caused by the clear-cut on the left side".

Photo #26. "...Here is another detail of this very same wash-out in the Berrys creek area as it rises in the culvert underneath the road".

Zimmer.

The erosion in photos 24 and 26 are again the result of the new Luscar road having changed the angle of flow in a small stream. This erosion is probably again accentuated by the logging but should not be blamed entirely on this operation. Photo 25 is a picture of a gravel pit created during road construction of the Luscar road in 1970 (Sec. 7, Twp. 49, Rge. 24, W5). There is no sign of logging in this picture. (see Photo Complex 18).



Hollum

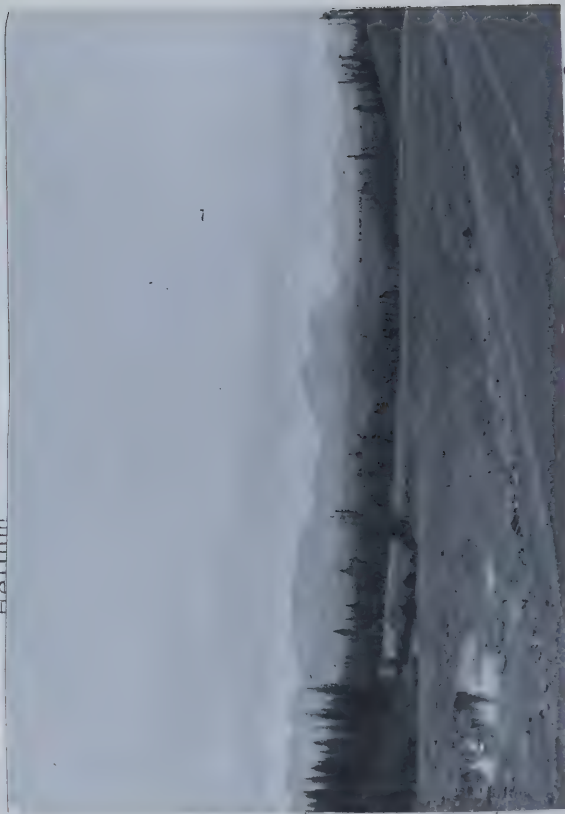
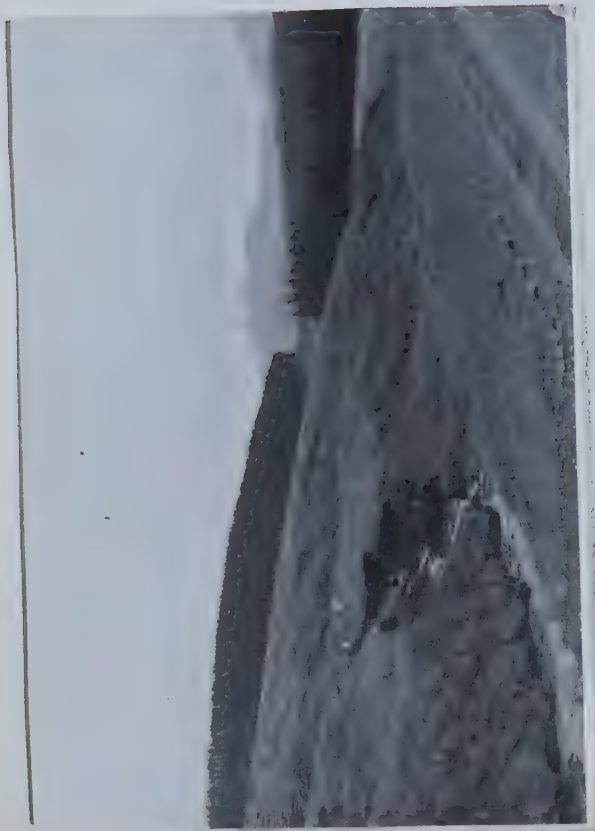


PHOTO COMPLEX 18

Zimmer #26



Zimmer #24



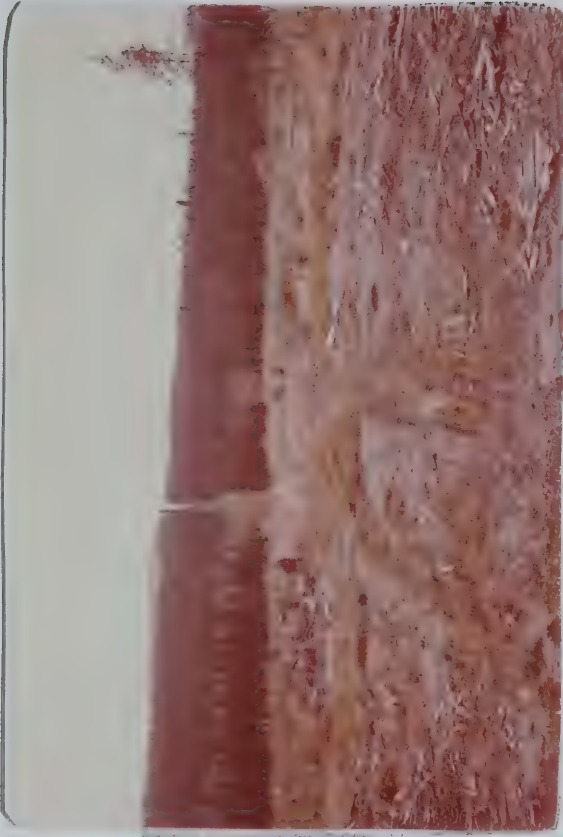
Hellum

Photo #36. "...On slide number 36 we have another viewing of the same area and here we can see the logging access road running through this area, former cut line, I suppose, which had been utilized for logging"...

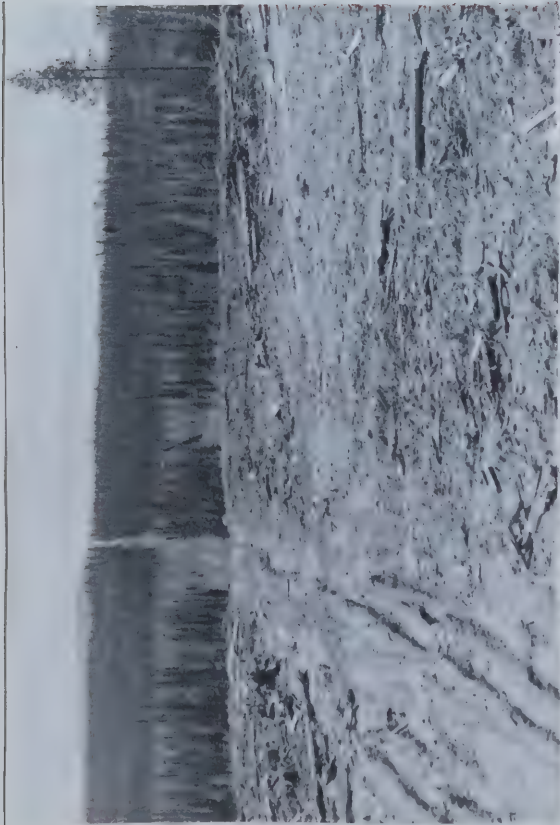
Zimmer.

Photos 35, 36, and 37 taken along the same Loffland Rig Road as mentioned under "logging to waters' edge", bear signs of seismic activity damages subsequent to logging and not before logging as Mr. Zimmer states. This area was cut in 1963/64 and disturbed by oil explorations reportedly as late as in 1970. This area was regeneration surveyed in 1969, after scarification in 1964, to give an average stocking of 72%, according to N.W.P.&P. records (see Photo Complex 19).

Hellum



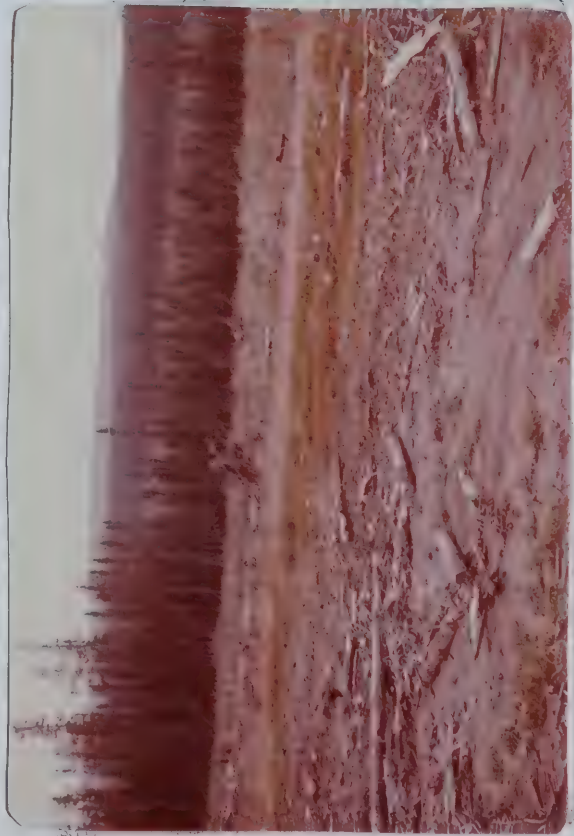
Zimmer #36



Zimmer #37



PHOTO COMPLEX 19



Hellum



Photo #13. "...but there is quite some erosion going on on the very top of that hill"....

Zimmer.

This area was logged in the spring of 1971 only a few months before Mr. Zimmer visited the area. The fresh slash and recent scarification might appear as erosion from the distance of two miles or more, but one can hardly make careful assessment from such a distance (Photo Complex 20)?

This photo 13 is in the same area as that of photo 12 where there were 646 seedlings per acre. It is too soon to tell whether or not the far hill will regenerate properly, but the charge of "quite some erosion" is unlikely in view of what has been found to be the case everywhere else where Mr. Zimmer photographed scarification and regeneration.



Zimmer #13



Hellum

Photo #19. "...Just one more proof that these kinds of conditions exist all over the area".

Zimmer.

This photo was taken along the same "Loffland Rig Road" as referred to for photos 38 and 39 (see page 39 of text). This road was put in for the 1970 logging of this area which was subsequently scarified in 1971, just before Mr. Zimmer visited the area. Access roads of this nature should be blamed on forestry operations and should have been removed after operations ceased in this area (Photo Complex 21).



Zimmer #19



Hellum

Photo #17. "...We are getting now a few more pictures here from what former logging access roads look like. This is what the company leaves them in when they are finished with harvesting;..." and "This eroded soil in this case is getting into the water-ways which is just on the other side of the car"...

Zimmer.

Photos 17, 18, and 21 were all taken at the junction of a logging road (eroding) and a fire road established in 1961. The junction is located in Section 1, Township 50, Range 23, W5. The adjacent land was logged in 1969 by N.W.P.&P. and scarified in 1970 and this access road should again have been treated. However, even if Mr. Zimmer's comments are warranted here it is doubtful whether or not the silt which is eroded does find its way into the nearby creek because this creek is at least 150 feet away from this road junction and the vegetation which covers the ground between the creek and this erosion impedes water flow considerably, (See Photo Complex 22), should water and silt flow across the road during heavy rains.

- 56 a



Zimmer #18



Zimmer #21



Hellum



Zimmer #17



Hellum

Photo #20. "...We were always informed or people in Alberta had been informed by the former government, I should say, that the company has only the right to place these signs if there is work going on in the area, or if the road is wet and muddy, and neither one had seemed to have been the case on this nice Sunday afternoon when the road was absolutely dry"...

Zimmer.

Photo Complex 23 shows Mr. Zimmer's black and white photo and a color photo taken a year later. The sign was by this time lying face down, on the side of the road, but it was raised to show that it was still in the approximate location in Mr. Zimmer's photo.

N.W.P.&P. officials told the Silviculture Section of the Department of Lands and Forests that the sign was placed on the road in July of 1971, when Mr. Zimmer visited the site, because vandals had caused considerable damage to machinery left unattended in the area. The validity of this statement can not be determined but it is a well-known fact that the public is prone to damage forestry equipment left unattended in the field.



Zimmer #20



Hellum

SUMMARY

Mr. Zimmer's and S.T.O.P.'s charges that N.W.P.&P. secured no or little regeneration in the eleven photo locations listed above (1,2, 5,8,12,15,30,41,49,52, and 64) are basically inaccurate. There were more than 400 coniferous seedlings growing per acre in eight of the eleven locations sampled and in the remaining three the stocking was between 335 and 382 seedlings per acre. The latter three locations had been scarified so recently that further seed germination might be expected over the next one or two years. All samples were typical for all respective photo locations.

The stocking to lodgepole pine after the Gregg fire in 1956 created an overstocking situation which already today showed its effect on growth in the seedlings. Thinning of the pine is essential for the maintenance of good growth as the "accidental" thinning in photo 60 should witness in another five to ten years.

None of the three locations listed by Mr. Zimmer as showing proof of logging to waters' edge were correct. Even though there probably may be examples of such logging elsewhere on the N.W.P.&P. lease area, it would appear that Mr. Zimmer is unable to distinguish between bonafide violation and normal logging operations.

There is proof in Mr. Zimmer's photos of erosion on logging roads left untreated after logging operations have finished, but the bulk of the erosion Mr. Zimmer talks about was apparently the cause of highway construction rather than logging or scarification.

CONCLUSION

It would appear from Mr. Zimmer's slide show and commentary that he has damaged rather aided good forestry practices in Alberta. His photographic evidence is of such questionable quality, proving wrong in many cases, that the Silviculture Section of the Department of Lands and Forests found itself defending N.W.P.&P. operations almost exclusively. This response is not meant as a complete endorsement of all forestry practices by N.W.P.&P. but rather as a set of specific comments on Mr. Zimmer's charges in very specific and limited locations on the N.W.P.&P. lease area.

A.K. HELLMUM

APPENDIX I

Presentation to the Minister of Lands and Forests

Clear-cut Operations Undertaken By

North Western Pulp and Power Limited at Hinton

Mr. Zimmer

Ladies and Gentlemen, the slides you are about to see have been photographed in the lease area of North Western Pulp and Power Company Limited, the pulpmill operation at Hinton, Alberta. The slides and this tape recording are part of a brief submitted to the government by STOP - Save Tomorrow Oppose Pollution. This organization herewith wish to express their concern and wish to bring to the attention of the government concern shared by many other Alberta citizens in respect to environmental damages which were found and exist in that pulpmill lease area. Examples of these damages will be seen on these slides and the nature of the damages found was described in the brief submitted to the government by STOP. My name is Armin Zimmer. I have done much work on this research project for STOP. I guided the photographer into the Hinton pulpmill lease area and pointed out these scenes which to photograph. I subsequently prepared a report for STOP outlining my findings, the report was entitled Keep Alberta Green. A copy of this report was made part of the brief to the government. I also did much research for this brief to the government. I may add at this point that I may impose on you to be patient if I am sometimes looking for words. I am in an awkward position here at home trying to adjust my own slides, focus them at the same time look up at the tape recording and make the tape recording. So would you please save sufficient patience to listen to the presentation. Thank you very much. I shall now describe the slides which were photographed during an extensive field trip last summer, starting with slide number 1.

Slide No. 1

This slide was taken just east of the Yellowhead tower along the trunk road from Hinton towards Nordegg and about five miles east - southeast of the McLeod River campsite. What we see on the slide is a remaining stand of timber that probably was left there as the forestry tower is just within feet of the edge of the stand as it appears. In the foreground we see the roadside ditch at the very left side we see gravel of the road. This picture has been taken very close to the road and it can be seen that the area is a most completely devoid of regeneration at least it appears to be that. As a matter of fact, as far as I can recollect I've seen this very same area in the very same state in 1963. Let us go to slide number 2.

Slide No. 2

Slide number 2 has been taken on the Grande Cache highway I believe. What we see here is a completely denuded area almost bald from horizon to horizon which we are just approaching by car. A little immature timber is left in the foreground. The area here shows very little reforestation evident. Let us go to slide number 3.

Slide No. 3

Slide number 3 has been taken on a portion of the old Grande Cache highway and is a close-up of the area which we have seen before. Here we can see what has happened. There are a few trees left near the roadside which apparently had seeded themselves before the mature timber was cut. Other than that we see that very fine silty soil lays loosely along side the road and towards evening of the same day, we saw this silty sand, very light weight sand, or silt drifting merrily along the roadside. Here we have a case of wind erosion which is quite evident and the moisture in the ground seems to be such that nothing is left there for new regrowth or even growth of sufficient grass. Let us go to slide number 4.

Slide No. 4

Slide number 4 shows some more of this Grande Cache highway area. It is a very sad sight if one has to believe that this is the future of Alberta Forests. The environment, it has been said, adapts, in this case it seems to have already adapted, namely from forest to desert environment. Let us go to slide number 5.

Slide No. 5

Slide number 5 shows another shot alongside this old Grande Cache highway which we have seen on slide number 3, again we see this drifted, freshly drifted soil, alongside the road in the ditch. And we also see some pine advance growth on the right hand side. Advance growth as far as I know which has not been stocked by the company but which seems to have stocked itself from mature trees prior to harvesting. It only seems to appear along the ditch side in this case and therefore I'm assuming that the mature trees seeded this young regeneration before they were harvested. Let us go on to slide number 6.

Slide No. 6

Slide number 6 again is taken east of the Yellowhead tower a little bit further east of the Yellowhead tower. All we can see here is very few trees; this is an area in which, to my knowledge, or very much of the timber anyways, had been cut before 1963. The area is almost bald from horizon to horizon and seems to extend for miles in all directions without any trees in between, any mature trees in between. We see a few single trees appearing here and there but most of the plant life you're looking at is small willows and brush which is not coniferous forest and will never grow to any size. The grass growth in this area is very sparse. Let us go to slide number 7.

Slide No. 7

On slide number 7 you're again back in the Grande Cache highway area. We are parked right on the highway here and we're looking over the shoulder of the road towards a creek on the far side of the road. In the angle which the picture is taken it is not very apparent that there is a creek. However, just beyond the road in the foreground we can see, next to the road, willow flats covered with some grass extending up to a white line in the centre of the picture. This white line is actually the creek bank which we tried to photograph here, unfortunately we could not get any of the water into the same picture. However, it can be seen from this picture that the pulp cut on the far side of that creek bank extends right into this creek. If I'm not mistaken, I haven't got the picture location in front of me, that the creek bed here belongs to either Pinto Creek or Little Berland Creek. If we take another look at this pulp cut area beyond we see that most of the timber remains are still strewn over the ground which appears to be a sign that the scarification equipment has not yet been in that area. What is remarkable here is that there was no attempt made to leave a margin to protect the watershed, of course this is not the only place where this is the case. We took countless other pictures and films where we can see the water and where we can see the clear cutting operations being carried right into the creek or river. Let us now go to slide number 8.

Slide No. 8

Slide number 8, we are back in the Yellowhead tower area and again we can see how sparse coniferous tree life is in this area which I described earlier as being bald from horizon to horizon. I can only notice one or two trees with large magnification, or one or two young trees that is with large magnification on this entire landscape. The grass here is very sparse in the foreground; at the very left we see some siltation from apparently from the clear-cut has washed down over the hillside. Let us now go to slide number 9.

Slide No. 9

On slide number 9 we can see a detail of what has happened to the area as far as plant life is concerned. By process of scarification all roots, all remaining tree stumps had been torn out of the ground, together with the soil reinforcing rootwork near the surface of the soil. All moss, all plant life, all shrubs, everything was torn out. This area here I believe was treated before 1963; this is what grows there now, a little bit of clover which seems to have been seeded. If there would have been coniferous trees in between one wouldn't have to crawl on his hands and knees to see the trees within this sparse growth. Let us go now to slide number 10.

Slide No. 10

Slide number 10, another last shot at the Yellowhead tower timber. I think what you see there at top right sticking out between the timber is the Yellowhead lookout tower. This is a similar shot then our first slide, just a little bit more close up here but still we can not detect anything of significance as far as regeneration is concerned. Let us now go to slide number 11.

Slide No. 11

This appears to be the other side of the road here of this McLeod River area where there have been a few where a few mature trees have been left standing. There is not very much to be added here except that it is apparent that this area extends from horizon to horizon. We drove along for miles and took one picture after another just like this. Let us now go to slide number 12.

Slide No. 12

On slide number 12 you are now west of the Yellowhead tower. The timber at the very left is the stand of timber which extends in a triangular fashion to the top of the hill in which the Yellowhead tower is at the very top. In the far distance we see a denuded hill and the area in the foreground of course doesn't look any better. Scarification most likely had been done in the foreground area, even though it still looks rough with debris, we couldn't detect any stumps in the area, a sure sign that scarification most likely had taken place. We didn't detect any regenerated trees either. Later on we will have a picture through a telephoto lens under the far hill across, which I think will show us more of what's going on up there. Let us now go to slide number 13.

Slide No. 13

There is the telephoto shot of this hill, I don't know whether it can get enough magnification and sharpness out of your projector but there is quite some erosion going on on the very top of that hill, just about at the very top centre of the hill, a little bit to the right. This is where it starts and it goes all the way along the top of the hill and seems to come down the hill towards the right. Let us now go to slide number 14.

Slide No. 14

This is another close-up of this area just east of the, pardon me, just west of the Yellowhead tower where we had walked in awhile and looked at some detail, found this one single tree left standing here. This particular area we found also lots of grass and what appeared to be a stump in the foreground so even scarification had taken place on this particular spot. It would indicate that it had missed this stump and this tree. There's quite some dense grass growth in this particular area, we didn't find it in very many places, but some places appear to be completely grown in with this grass some reason or other. It would be extremely hard to say whether there is small trees under this type kind of grass, therefore I wouldn't make any suggestion whether there are or are not. However, I'd like to say again that in the areas where there was very little grass that the regeneration is usually was very poor as well. Let us now go on to slide number 15.

Slide No. 15

Slide number 15 again shows some close-up of this area. Here we see again this dense grass growth, I'm not sure now whether this particular shot was taken in the same area, there seems to be too many hills in the back ground; it could be that this was taken along the Moberly road this should be checked out with the locations, which I have not got in front of me at this very moment. The grass growth here is very dense; again, it would make beautiful environment for pheasants, I would believe, if there would have been enough water there but it sure makes a poor environment for a forest. Let us now go on to slide number 16.

Slide No. 16

Slide number 16 gives us a beautiful shot again of the light structured soil as it is eroding from a clear-cut area along an old logging access road running off the old Grande Cache highway. The trees we see there is what is called advance growth and there's trees which were left standing during the harvesting operation of mature timber. The road is right in the foreground, we can see that the roads originally had washed out or were quite deep and have in the meantime filled themselves with some of the light weight silt which seems to make up this. Silt or sandy silt seems to make up most of this particular area and it is quite susceptible to erosion by wind and water. Let us now go to slide number 17.

Slide No. 17

We are getting now a few more pictures here from what former logging access roads look like. This is what the company leaves them in when they are finished with harvesting; and this one was taken about two miles farther west, I should say two miles east, of the McLeod River bridge taking the first eastern fire road from the trunk road and we got about half a mile in. The road was closed to the public; we drove in anyways; that's how far we got and this is what we found. There is no excuse at all for this kind of condition. This eroded soil

in this case is getting into the water-ways which is just on the other side of the car you see in the back ground. The area just to the left top of the car had been reforested and there is quite a bit of tree growth that can be seen, even if I do not consider it sufficient; however it has definite appearances that it has been regenerated.

I would like to ask why was the road bed not filled and why was the soil not staked into place so that further erosion could be prevented and why was the area not replanted as well as being part of the forest which had been harvested by the company? This type of road is of course no forest environment at all, it had been completely destroyed. There is one of these access roads to be found in just about every former pulp cut. Let us go to the next picture which is slide number 18.

Slide No. 18

Here we see another detail of the very same road I have just described as I am trying to get far around to the top and give the photographer a chance to present some scale of the size of the erosion. I'm trying to go around to the top here and I find myself getting stuck in the silt which had been washed down the road. Let us go on to the next slide which is slide number 19.

Slide No. 19

Now this of course looks very similar to the one we had just seen but it was actually taken a long distance away from that area, namely about twenty miles southeast of that area. Just one more proof that these kinds of conditions exist all over the area. Here we see a large washout going transverse to the direction of the access road which I'm looking at, which is not the case in the picture which we had just seen in the picture before. The washout here seems to be about three feet in depth and of course there goes our top soil. It takes a thousand years in that area to build an inch of top soil. It appears that no consideration has been given to that or had been given to that by the company; and it also appears that the former government just was not strict enough in enforcing repair of areas like this which had been destroyed by company operations. Let us now go on to the next slide namely, slide number 20.

Slide No. 20

On slide number 20 we see another type of road incident. I should call it from this an access road, a timber access road or logging access road which is leading off the Grande Cache highway towards the west; it is about forty miles, I would say, or forty five miles northerly along the road from Hinton and here we found one of these signs which post the road as closed for public travel. We were always informed, or people in Alberta had been informed by the former government I should say, that the company has only the right to place these signs if there is work going in the area, going on in the area, or if the road is wet and muddy, and neither one had seemed to have been the case on this nice Sunday afternoon when the road was absolutely dry and there was no work going on in the area as we drove all the way in on that road. Let us now go to slide number 21.

Slide No. 21

On slide number 21 we are getting now into some more pictures of erosion. What we see here is a loading area, I don't know if your projectionist can tilt the picture in such a way that the tall trees in the back ground appear vertically. The photographer who took this picture apparently just held the camera at an angle, the terrain is actually not sloped as it would appear, but it is never-the-less very excessively eroded. This again is an area which was found on a place called Norris Creek road, I believe there's reference made to it in the picture codes locations, and this area in there was a light loam type of soil I would say and it was subject to much water erosion even in flat areas, it seemed to wash itself very smooth on the surface. Let us now go on for some more of these erosion pictures to slide number 22.

Slide No. 22

Slide number 22 I think is another shot of this fire road in which I got stuck in the silt, it's just another shot of this very same area. It shows you a detail here of what has happened. The road is just about ready to wash out from the river wash-out this spring. It is getting very soft in there, water standing all the way down and of course it's got no where's to go but down hill. Let us go on to slide number 23.

Slide No. 23

Oh there's a dandy. This is taken along the Grande Cache highway right beside the major highway. It shows some of the area we looked over earlier which was denuded from horizon to horizon. We saw a picture approaching the area. We followed the highway here; what you see here is the road cut off the highway where the highway is somewhat lower than the surrounding terrain and we see also a wash-out which seems to extend about half ways up the up hill pulp clear-cut area. The wash out in the foreground seems to be about ten feet in depth, it does not only damage to this wide area here, below the bankments, it also fills up the highway ditch in the process and it fills up the creek which is at the end of the highway ditch with silt. It can be seen here very clearly that this erosion is not caused by the road but is caused by water which could not be retained on that clear-cut hill side and thus float towards the road causing excessive erosion. The erosion, as a matter of fact, starts quite far back and of course once it comes to the steeper cut of the road it does all it's major damage, but it's not caused by the road, it's caused by the run off which is no longer slowed down by plant life and the clear-cut area and therefore becomes excessive. The surface water which comes for a long distance down hill over this clear-cut, due to the fact that it is not absorbed into the soil, forms a large head of water by the time it approaches the highway embankment and thus starts washing starting at the very top of the embankment. We will have some more of these pictures shortly. Let us go to the next slide, slide number 24.

Slide No. 24

This one has been taken on the highway from Hinton to Luscar, a new highway; as a matter of fact this very same wash out which again is not caused by the road but is caused by the clear-cut on the left side. This very same wash out already appears in a book which has already been photographed a long time ago and namely in the book entitled, Some Implications for Clear-cutting in Alberta, which had been issued by the Canadian Forestry Division, Edmonton. They describe this very same cut, the very same shot of photographic evidence. Lets go on to the next picture namely slide number 25.

Slide No. 25

Slide number 25 shows what happens on the other side of that highway just across from the erosion cut we had just seen. What we see in the back ground is part of the Gregg river tributary. I think it is called Berrys creek if I'm not mistaken. It flows into Gregg river just about another half mile. It's flowing away from the point of view here, and you see this creek just where the road vanishes in the background into the timber, just in the front of this road you see the water. Closer to the foreground on the left side you see a big puddle and some boulders laying around. This is water which had come down from this erosion scar. On the far side is a culvert what goes underneath the road and the silt is deposited in the flats between the road and the creek in the background. Let's go on to the next picture, namely slide number 26.

Slide No. 26

Here is another detail of this very same wash-out in the Berrys creek area as it rises in the culvert underneath the road. The wash-out in this place seems to be about five feet deep. Let's go on to the next slide, slide number 27.

Slide No. 27

You are again back at the very same location here along the Grande Cach highway where we saw the huge erosion-scar before. This is some more of this erosion going on along this particular stretch on clear-cut on the same side of the road, and if you look down the foreground in the ditch we see the siltage that has deposited there and it's running towards the next closest creek. In this case we notice also at the very top of the road what appears to be a mud slide. I can not test that it has been a mud slide but the sudden change in angle of the terrain seems to indicate this. Let us go on to the next slide, the next picture slide that is.

Slide No. 28

This is slide number 28 it shows some more of this area. This area extends for several hundred yards along side the road. It seems like the whole hill is coming down upon the highway. I think there has been a lot of damage done here by cutting timber in that fashion, that it results in surface water run offs which damage highway embankments to that extent. Let us go on to the next slide namely slide number 29.

Slide No. 29

One more of the same shots along that stretch of highway.

Again we see that the erosion scars start at the very top of the road cut, a sure sign that they're not caused by the road-cut but instead are caused by water which flows unchecked from up-hill of the clear-cut side towards the road and builds up sufficient head and velocity when it approaches the additional slope of the road-cut to wash out the slope. Let us go on to the next slide.

Slide No. 30

This is slide number 30. In this area again we can see some erosion on the right hand side, I think that this is just taken at the very location where this Grande Cache highway erosion tapered out. The erosion is in the right foreground. I can not tell whether you can get this area clear enough, but it seems to have been completely stripped in that area of all plant life. Let us go on to the next slide namely slide number 31.

Slide No. 31

Here we have what happens when the timber is cut right into a watershed, in this case you are looking at an Alberta river. This is water conservation, pulpmill style. This has been tolerated by the former government; I think the new government should put an end to this. The timber has been cut right into the Gregg river. This picture has been shot along the Gregg river road which starts about one mile west of the McLeod river campsite on a trunk road and from this point runs west towards the Luscar road. Let us go on to the next slide namely slide number 32.

Slide No. 32

Here we see the same tree at the very right hand, centre of the picture which appeared in the previous picture. These pictures here along the Gregg river have been taken as sequence shots and what we see now is an extension of the damage there which has been done by the timber being cut right into the high-water mark of the creek bed. The silt has deposited all the way along on the left hand side in the high water area and we also can see where the silt comes from, mainly what appears to be some sort of wash-out which is visible just centered below the remaining stand of timber. Let us go on to the next slide, slide number 33.

Slide No. 33

Slide number 33 we see the same tree again which we just noticed before the one with that extra peeler logs taken out of the left end, right in the centre of the picture this time. We again are looking at the wash-out and some of the silt; and the wash-out area in this case appears to be straight above the left-hand of the tree in the centre. Let us go on to find out what the sign on the right hand side of the Gregg river picture reads.

Slide No. 34

The next slide is slide number 34. Here we get a full view of what has happened in the area. "Danger wash-out." Apparently the road has washed out at this point and it seems to me that a similar sign should have been put under the far side of the creek and where similar wash-outs had washed out the top soil which is necessary to maintain the plant life in that area. It is now necessary that we shut off the tape record over 40.

I am now ready to describe slide number 35.

Slide No. 35

On slide number 35 we see an area, this rig-road which has been described now a location code. This particular area has a very light brown soil, the consistency of wheat flour; at the slightest touch it seems to disintegrate. The damage here consists mainly of erosion in spite of the fact that the area appears to be almost level. Yet quite a bit of erosion is going on never the less. At the foreground here we see freshly deposited and eroded soil and we shall see some more of it on the next two slides. Let us go on to slide number 36.

Slide No. 36

On slide number 36 we have another viewing of the same area and here we can see the logging access road running through this area, former cut line, I suppose, which had been utilized for logging, and we also see that the area is washing out all over the place despite the fact that this is apparently flat on the surface. Tremendous damage has been done on this particular area and we shall see some more of this in slide 37. Let us go to slide 37 and have a look at it.

Slide No. 37

Again is in that same area and shows us some detail of what is going on there. The stumps have been either covered with silt or have been torn out by the scarification machinery, which one I can not tell. However, the situation is very excessive. It appears to me it has been caused by over-use of earth disturbing machinery. Let us go on to the next slide namely slide no. 37, pardon me I should say slide number 38.

Slide No. 38

Slide number 38. We are along the same road below the area where the timber has been cut right into a small creek, the head-waters of a small creek. All the silt we saw previously on those slides is finding it's way now into this creek, running along the road which is on the very left foreground, and running along the road in the ditch you can see at the top left of the picture as all the silt runs into this water-way. Let us go on for another shot of this area on the next slide namely slide number 39.

Slide No. 39

On slide number 39 we see another view of this particular location, a few trees remain on the right hand side and the silt from the remainder of the area plus logging debris are finding their way into this very creek. Let us go on to the next slide and see what happens to this silt. The next slide is slide number 40. Let us go to slide number 40.

Slide No. 40

This is a view down-stream just from the very edge of this last picture which you looked at, and here we see what happens to the silt. The silt has covered an area just down-stream from the timber operation extending in size at least 150 by 200 feet. The silt has deposited in that area to an average depth of about one foot. The little water-way is completely choaked up with silt and consequently has to channel it's way through the silt. It must be assumed, however, that much more silt, than what is deposited in this area here as we can see, has washed down that little creek already and finds it's way into larger water-courses or into places other than this particular place. Such water-shed protection is of course completely unacceptable, whether or not there are present regulations protecting the head-waters of our water-sheds I do not know; there has been some mention made to me which I could not verify that there is a regulation which requires a buffer-zone of a minimum of 66 feet from the shore line of small creeks.

As we have seen on the previous slides, this buffer zone was not established at this creek. It seems to be if such a regulation exists that it is not being enforced or was not enforced formerly. Let us go on to the next slide, slide number 41.

Slide No. 41

On slide number 41 we can see what slash looks like. This particular area of slash was found, I believe, west of the Yellowhead tower. This could be checked with the list of the coded locations. What we see here is that slash covers the area to an average depth of about one foot in solid wood. Another thing which we can easily notice here is the type of debris in that area. There are quite a..., there's quite a large amount of pieces of wood here which appear to have originated from immature timber which was of course cut-over during the clear-cutting operations and simply left in the form of slash since it couldn't be utilized by the company. The walking in this area would of course be very difficult and therefore the slash would require treating before any planting could be undertaken. Let us go on to some of our next pictures, namely slide number 42.

Slide No. 42

Slide number 42 shows another access and loading area with remains of timber laying in the foreground. This I believe was again taken on the Norris Creek road trip. Let us go on to the next slide, slide number 43.

Slide No. 43

Here we see slash as it appears a few years after the fact. The very year..., in the very foreground on the right-hand side we can see one stump still remains rooted in the ground; farther above that, directly above that, almost at the sky-line we notice another stump still in the area; it appears that the scarification equipment had missed this area. This probably explains the debris laying on the surface which has not been broken up as yet. Let us go on to the next slide, namely slide number 44.

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Slide No. 44

Now this is a picture some people may want to complain about. It shows an area of untreated slash west of the Yellowhead tower. Now some people of course will say that this also constitutes an environmental mess. However, I feel that actually the mess is not as bad as if the whole landscape erodes which is caused by scarification. We also notice that there is more plant life in the area than in a scarified area. These shrubs will soon grow to a size where they start to shape the soil thus providing a favourable conditions for regrowing of coniferous forests. Let's go onto the next slide, namely slide number 45.

Slide No. 45

On slide number 45 we have finally caught up with the culprits. What we see here is two large caterpillars used by the company for the scarification; and we also see in the left foreground along the highway we see the scarification ploughs, I should call them, I don't know what they're actually called but to me they have some relationship to a plough. We have a closer look at one in the next slides. At the right we see in the foreground the heavy harrows about fifteen by fifteen foot in size which are part of the set up and are dragged behind the machines. The ploughs attached to the front of machines and are of course hydraulically operated to lower them into the ground or above the ground wherever the operator feels necessary. Let's go to the next slide, slide number 46.

Slide No. 46

What we see here is the two huge bulldozers as used in the process. Other than the soil detail as it appears after scarification, there is not much to be said for this particular slide. Let us pass on to the next slide, slide number 47.

Slide No. 47

Slide number 47. We see detail of one of these ploughs which are attached to the front of the bulldozer. It is very heavy equipment, but the triangular ridges seem to be out of solid steel probably filled inside with some weighty equipment. The ploughs can be lowered into the soil or dragged above the timber to break up the timber and partially plough it into the soil. Of course these ploughs, together with the harrows behind, are capable of tearing out every root that is in the ground surface. Let us go on to the next slide, slide number 48.

But I do claim that in all likelihood from the time when the government check was made three years after the replanting operation until the time when we came back into the area, that is, according to the age of the trees in which we find the trees are now, possibly seven out of eight died thus giving us a present figure of one tree for each 8 hundred square feet instead of one tree for each one hundred square feet. If we assume further that the government did make their checks when the growth was three years of age in that area, and if we also assume that the trees as we see them on the picture are from six to eight years of age, then we must assume that this mortality took place within the short span of three to five years. Let us now go on to the next one, namely slide number 53 and slide number 54.

Slides No. 53 and 54

Both of these slides show the same area again. No. 53 shows an overall view and number 54 shows a detailed view of what appears to be an old logging road extending way back into the area. Not only does the logging road extend way back but also we notice a wash-out on this logging road which has still not healed and is extending way back. We also notice that the tree growth in that particular logging road area is still less frequent than the remainder of the area, a sure sign that trees don't grow in wash-out. The last three slides and the next two they were all taken in the same area, the same harvest area, along the Grande Cache highway. Let us have a look at the other slides, next slide number 55.

Slide No. 55

This is more of that very same area on slide number 55. Sparse regrowth indeed. I think we shall not spend too much time on this one and go on to the next slide namely slide number 56.

Slide No. 56

Slide number 56 still shows us more of the same, so let us go on to slide number 57.

Slide No. 57

Well this is a picture of another different area now. This picture has been taken in the McLeod River area approximately east or generally east of the Yellowhead tower and I don't know whether this could be described as reforestation. However, not very far from this spot the area was described by a company sign as alpine fir regeneration. With close-up view we can see about, oh I would say about, twenty trees in this general area on the immediate foreground up to half ways up on the hill. Further up on the hill we see the influence of the margin timber resulting in what appears to be much denser forest tree growth. One reason why the brief to the government asks for strip cuts of lesser widths because the regeneration is obviously much easier, much better within margins of remaining timber. Let us go to the next slide, namely slide number 58.

Slide No. 58

What we are comparing now to these previous pictures is natural reforestation following fire. These particular areas show former forest fire areas. This is the first one of them. It shows regrowth of spruce or alpine fir, I can't quite make it out here on the picture. In between the old burnt post we see also a completely bare pulp cut in the background right next to this fire area. Let us go on to the next picture and compare fire reforestation again.

Slide No. 59

This is slide number 59. On slide number 59 we see just how dense mother nature seeds trees in order to prevent environment destruction following fire. With such dense regrowth of small trees it is evident that the soil will have no chance to erode as the immediate surface area of the soil is, immediately following the fire, covered with a net-work of small roots from these new seedlings. The trees further-more provide shade for each other and thus provide the necessary humidity conditions near the surface of the soil and immediately below the surface where these small roots take their nourishment. It protects the moisture from excessive evaporation by wind and sun and heat. This contributes to fast growth of the young trees and in no time at all some of the trees will grow to a size where they will crowd out other smaller trees. And thus natural selection will only let the strongest and healthiest trees survive this close competition, what remains then is a healthy forest. Let us now go on to the next slide, namely slide number 60.

Slide No. 60

On slide number 60 we are looking at the pine regeneration following fire along the Gregg River road. I estimate that the pine in this particular area regenerate at a density of at least one tree for every two square feet. To give you some scale of the height of those trees let us look at the next picture, slide number 61.

Slide No. 61

I'm standing in the background here in the young growth and I have reasons to smile because here is what I can call regeneration. I agree that some forester's might call it excessive regeneration and in some ways I share their feelings, however. Regeneration, pine regeneration of this nature, has taken place for thousands and ten thousands of years. The forests we harvest today are the result of such dense regeneration. I can not agree with some foresters' opinions who claim that such dense regeneration will result in stagnation of the entire regrowth. Since most mature pine forests of today have started in this manner. If you compare this particular regrowth to the pulp mill regrowth within a mile of that very area then I say that I'd rather have this particular regrowth as I see it here on the picture than that of the pulp mill, because, at least if nothing else, this dense regrowth protects the soil from erosion and protects the environment of the forest and it conserves our water shed. These are things which I can not necessarily say of pulp mill clear-cutting. Let us go on to the next pictures, namely slide number 62.

Slide No. 62

Slide number 62 has been taken across from the Nojack campsite it shows thinning out with a stand of mature timber which could be used as a favourable environment for regrowing young timber below the canopy of the remaining mature stands. Now I have reasons to call this a method of selective cutting. It protects the forest environment, the soil is never disturbed, the best possible conditions are left to remain within this environment for young regrowth to take place. I understand that this operation was started by Muttart Lumber at one time and I also understand that at the present time the thinning of the stand is being continued by inmates of a close by limited security camp. Let us now look at the next slide, namely slide number 63.

Slide No. 63

And this slide we are again looking at the same thinning operation across from the Nojack campsite. The trees of course in this area I don't think are thinned for the purpose of regeneration, I think they are thinned for other reasons possibly for extension of the campsite etc. However, it gives other people some idea of what I mean by selective cutting, namely creating a canopy of mature trees which can be cut at a later stage, possibly in such selective cutting the trees could be thinned somewhat more than this particular operation here shows and trees could either regenerate naturally within that area depending on the species of trees of course or could be replanted to grow one of the best possible environmental conditions. Once the new regeneration has successfully been established, and following another five years of that, the remaining mature timber can then be cut without too much damage to the still flexible young growth and the forest environment will never suffer. Let us go to the last slide now, namely slide number 64.

Slide No. 64

STOP had promised 65 slides but I'd like to apologize on behalf of STOP that we have lost one of these slides and therefore we only have 64 slides. We are now looking at slide number 64 as being the last picture. This picture has been purposely chosen as the last picture since it very well represents the forest of the future in Alberta if we continue with present regulations under which the pulp mill is allowed to operate. What we are looking at is an area bald from horizon to horizon; there is not very much forest environment left, there is not much water-shed protection left, there is not much water-conservation within the soil left, what we are looking at is an area that used to have all these properties when it was still beautiful forest before it was clear-cut and scarified by the Hinton pulp mill operation. Much of the area we are looking at was cut before 1963 and little has changed in that area since. Is this the forest of the future in Alberta? Does this compare with regrowth after fires? Should we not become sufficiently concerned to change the harvesting methods to more rational methods than the one which was practised when this particular area which we are looking at was harvested? People from all over Alberta are becoming concerned about what is going to happen in this area. We trust that the government will share this concern. On behalf of STOP and myself I like to thank everybody for showing sufficient concern to view these pictures and to listen to this presentation. Thank you very much ladies and gentlemen.



MEMORANDUM

FROM: Allan A. Warrack,
Minister of Lands and Forests.

OUR FILE NO.:

YOUR FILE NO.:

TO: Premier
All Cabinet Ministers

DATE: November 22, 1972

Re: S.T.O.P. Organization Brief on Clear-Cut Operations of
North Western Pulp and Power Ltd.

In response to the charges made by A. Zimmer in his brief and slide presentation of June, 1972, the Department of Lands and Forests has completed a detailed study and report.

In our investigation we attempted to duplicate the exact photographic coverage of the areas in Mr. Zimmer's photographs. Tree seedlings were staked in the center portion of each of our photographs to portray actual regeneration.

I feel that this report answers Mr. Zimmer's charges in a fair and objective way. Please contact my Special Assistant, Ed Wyldman, if you wish to look it over.

A handwritten signature in dark ink, appearing to read "Allan A. Warrack".

Allan A. Warrack, P.Ag.

Dr Harack.

this is the
report. Re Zimmer's
report. I have a copy.

I don't know if there is
much to be gained by showing
the report, at this time, to
those of the cabinet who
Mr Zimmer showed his
slides to unless the issue comes up.
V. A.



RGS/wlp

A handwritten signature in blue ink, possibly reading "J. G. Steele".

MEMORANDUM

FROM: R. G. Steele
Director of Forestry

OUR FILE NO.:

YOUR FILE NO.:

TO: Dr. V. A. Wood
Deputy Minister

DATE: November 14, 1972

You will recall that Mr. A. Zimmer, through the sponsorship of the S.T.O.P. Organization of Edmonton, submitted a critical report of the North Western Pulp and Power Ltd. operations at Hinton. Our Minister requested that we investigate the charges and report back to him. Two copies of this report are attached together with a covering memorandum from the Head of the Timber Management Branch.

There are three principal points that Mr. Zimmer brought out in his presentation:

1. Lack of adequate regeneration on cut overs.

In our response we attempted to duplicate the exact photographic coverage of the areas in Mr. Zimmer's photographs. To avoid bias, we staked each seedling in what we estimated to be the center portion of the area he had photographed. The actual regeneration sampling for the staked and adjacent areas is quoted in each case. Our figures can be readily checked by any qualified person that wishes to conduct a proper regeneration survey.

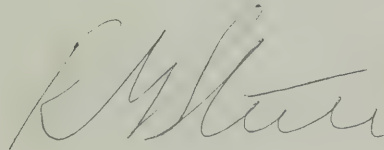
2. Mr. Zimmer suggests that a much more satisfactory result is obtained from fire than from cutting and natural or artificial regeneration.

The fact is that fire in pine results in extreme overstocking that produces dense stands of pine that would seem to have no value other than a superficial aesthetic appeal. These stands will not support big game, will not produce merchantable timber, do not allow snow to penetrate to the ground and remain

there to prolong spring run-off, they severely sap the moisture and nutritive values from the soil and consequently are of no real value other than limited site protection. The Fish and Game Association has suggested that stands of this nature should be burned, thinned or otherwise treated to provide some recreation values.

3. Erosion problems as pointed out by Mr. Zimmer are certainly one of our major concerns but all other studies carried out reveal that these problems are created by road construction and not by clear-cutting of timber itself. There is practically no way that you can construct a road without some sedimentation. With proper post treatment, including revegetation, adequate culverts, proper backslopes, etc., the erosion and sedimentation caused by roads can be reduced to a minimum. Many of the samples presented by Mr. Zimmer were the result of clearing by the Department of Highways and Transport and not by the North Western Pulp and Power Ltd.

In presenting this report, I would recommend to the Minister that our presentation be given to the group that was present when Mr. Zimmer showed and discussed his slides. Alternately, the Minister may wish to visit the area, which he has been unable to do so far, to verify the material presented in our response.

A handwritten signature in cursive script, appearing to read "R. G. Hunter". The signature is written in dark ink and is positioned in the lower right quadrant of the page.

APPENDIX II

